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ABSTRACT

This study tested a causal model of the prediction of the rate of occurrence of social and academic problems that results from college students' drinking. The model posited two pathways, one examining self-worth perceptions and symptoms of depression as mediators and one examining binge-drinking frequency as a mediator. Predictors included: hassles associated with college life, having an active spiritual life, receiving support form peers, and having a warm and accepting relationship with parents. Structural equation modeling analyses show a good fit of the data, collected from 686 undergraduate students at a religious-affiliated university, to the model. Findings are discusses with respect to prevention and intervention approaches that might address the mediating and predictor factors investigated. (Contains 2 figures, 2 tables, and 14 references.) (Author/SLD)

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Path Model of the Processes Influencing Drinking-Related Problems among College Students

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Abstract

The present study tests a causal model of the prediction of the rate of occurrence of social and academic problems that result from college students' drinking. The model posits two pathways, one examining self-worth perceptions and symptoms of depression as mediators and one examining binge-drinking frequency as a mediator. Predictors include hassles associated with college life, having an active spiritual life, receiving support from peers, and having a warm and accepting relationship with parents. Structural equation modeling analyses showed a good fit of the data, collected from 686 undergraduate students at a religious-affiliated university, to the model. Findings are discussed with respect to prevention and intervention approaches that might address the mediating and predictors factors investigated.

Path Model of the Processes Influencing

Drinking-Related Problems among College Students

Recent reports (e.g., Center for Addiction and Substance Abuse at Columbia University, 1994) and studies (e.g., Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994; Wechsler, Lee, Kuo, & Lee, 2000) of college student drinking and the consequences of heavy drinking have heightened the level of concern among college and university officials of the hazards of heavy alcohol consumption. According to some researchers, large numbers of college men and women are binge drinking. For example, Wechsler et al. (1995) found that 44% of college students engaged in binge drinking at least once in a two-week period during the semester, including 50% of men and 39% of women. Such abusive drinking patterns have important implications for the social and cognitive development of college and university students.

To attempt to understand the causes of these dangerous levels of binge drinking, some researchers (Fenzel, 1998; Holman, Jensen, Capell, & Woodward, 1993; Schall, Kemeny, & Maltzman, 1992) have identified factors pertaining to the college environment and personal characteristics of college students that are predictors of both rates of alcohol consumption and the number of academic and social problems that students experience as a result of drinking. These studies have shown that drinking--even frequent binge drinking (defined as the consumption of 5 or more alcoholic drinks in a sitting on 3 or more occasions during a two-week period)--is not indicative necessarily of psychological or emotional distress. On the other hand this research indicates that psychological difficulties, such as symptoms of anxiety and depression, play a role in students' experiences of academic or social difficulties that result from their drinking. At the same time, the more frequently students engage in binge drinking, the more likely they are to experience difficulties such as missing classes and class assignments and conflicts with roommates and law enforcement personnel.

The present study was designed to expand on previous research by testing a model of the process that leads to the experience of problems that take place as a result of alcohol consumption among college students. The model tested elaborates on two basic pathways that together show how psychological distress, specifically the experience of depression, and the frequency of binge drinking lead to drinking-related problems and difficulties. As shown in

Figure 1, the pathway through depression involves a number of factors, endogenous and exogenous to the individual, that include the experience of daily stressors, or hassles, the incorporation of spiritual practice and attitudes, social support from peers, and warmth, support, and respect that students experience in their relationships with their parents, along with perceptions of self-worth. The path that involves the frequency with which students binge drink is largely distinct from that involving depression, as research (e.g., Fenzel, 1998; Wechsler et al., 1994, 2000) has shown that binge drinking is a normative behavior among college students, a behavior not brought about by self-worth deficits or indicators of pathology. Previous research (Fenzel, 1998) has also shown that peer social support can have a small, but significant, positive association with binge drinking frequency among college students.

The incorporation of self-worth perceptions as a mediator in the model is based largely on the work of Harter (1999), which has shown a consistent relation between self-worth perceptions and depressed affect among normative and clinical samples of older children and adolescents. In addition, Harter's work has demonstrated the role that self-worth has in mediating the relation between peer social acceptance and support on the one hand and depressed mood on the other. Her findings are consistent with a social-cognitive view of how depressive symptoms may develop.

The focus on problems related to drinking is important because college students who experience these social and academic problems are at risk for social and cognitive developmental difficulties, including the failure to address important identity and relationship developmental issues. The findings will have important implications for the work that counselors in counseling centers and alcohol education offices do with students who abuse alcohol.

Method

Data were collected from 489 students, 137 males and 352 females, with mean age of 19.4 years, of whom 90% were Caucasian, from all four undergraduate classes of an eastern private liberal arts college. Surveys were distributed to resident students (85% of sample) by residence hall staff and mailed to commuter students.

Some of the items (binge drinking frequency, operationalized as consuming 5 or more drinks in a sitting) and scales (problems related to drinking) from the survey that are included

in the present study were found on the Core (1994) alcohol and drug survey that was administered along with a Student Development Survey of items adopted from other scales. The measure of hassles (12 items, alpha=.76) was adapted from the Inventory of College Student Recent Life Experiences (ICSRLE; Kohn, Lafreniere, & Gurevich, 1990), the self-worth scale (6 items, alpha=.81) was adapted from Rosenberg's (1965) scale, and the depression measure contains 8 items (alpha=.87) from the Symptom Checklist, or SCL-90R (Derogatis, 1983). The measure of active spirituality or faith was developed by the author (Fenzel, 1996; 8 items, alpha=.96) and the measure of the quality of relationships with parents (6 items, alpha=.83) contains items related to students' perceptions of warmth, respect, and support from parents.

Results

Table 1 shows the results of the analysis of first-order correlations involving the eight variables included in the model. The structural equation model shown in Figure 1 was estimated using EQS software (Bentler, 1995).

Results show that the hypothesized model fits the data well, with acceptable goodness-of-fit indicators found, $X^2(8, N=615)=15.78$, $p=.046$, $X^2/df=2.0$, CFI=.99, GFI=.99, AGFI=.97, RMSEA=.04. Figure 2 gives the standardized coefficients for the significant paths in the model. These results show that college students' experiences of social and academic problems related to their drinking are mediated by the frequency with which they engage in binge drinking as well as by depressive symptoms and self-worth perceptions. The variables in the model accounted for 48% of the variance in problems related to drinking, with the frequency of binge drinking alone accounting for 46% of the variance in problems.

Table 2 provides information on the standardized direct, indirect, and total effects of each of the predictor and mediating variables on problems. After the large direct effect that binge drinking frequency has on problems, two additional variables that were shown to contribute substantially to the prediction of problems are the levels of active faith in God and daily hassles. Social support has a moderate positive effect on binge drinking frequency, which, because of the strong positive relation between binge drinking frequency and problems, accounts for the overall positive effect shown for social support. The indirect effect of social support that operates through self-worth perceptions and symptoms of depression is negative, as expected.

With respect to mediating effects, results showed that binge drinking frequency mediates the relation between active faith and problems and the relation between social support and problems. In addition, self-worth mediates the relation between all four predictors--hassles, active faith, social support, and parental relationship quality--and depression. Also, depression mediates the relation between three variables—hassles, social support, and self-worth--and the criterion variable, problems.

Discussion

The present study provides a test of a model that predicts problems that college students experience as a result of their consumption of alcoholic beverages. In this model, two sets of paths were tested—one mediated by the frequency with which students engage in binge drinking and one mediated by perceptions of self-worth and symptoms of depression.

Results provide strong support for the hypothesized model, with all but two of the hypothesized paths found to be statistically significant. These results show that there are multiple pathways by which late adolescent college students encounter problems related to their drinking. Not only does the frequent consumption of alcoholic beverages lead to the experience of social and academic problems, but the students at greater risk for developing such problems are those who, for a variety of reasons, also suffer elevated symptoms of depression. Among these reasons is the perception of everyday hassles related to the role of being a college student.

Important to note is the finding that having peers available whom individuals can approach for support is a double-edged sword for many students. Such supportive friendships appear to lower the risk for self-worth deficits but they also increase the likelihood of engaging in frequent binge drinking. This finding is consistent with the previous research that shows that peer support is associated with more frequent binge drinking (Fenzel, 1998), as well as research supporting the role that self-worth has in mediating the relation between peer support and acceptance and depressive symptoms (Harter, 1999). The finding that peer support has a positive total direct effect on the experience of problems related to alcohol consumption is due largely to the strong relation found between binge-drinking frequency and drinking-related problems and suggests the need for additional research to better understand how peer support contributes to abusive drinking and drinking-related problems.

Having an active faith life also influences decisions to binge drink (negative relation) and self-worth perceptions (positive relation). Although this finding may be unique to the type

of institution at which the study was conducted, namely a Catholic liberal arts college, it still warrants consideration. For example, parents of adolescents may want to help provide their children with a strong spiritual base to help them cope with the pressures to engage in abusive drinking.

The low amount of variance in the prediction of binge-drinking frequency found in the model tested suggests that future research might investigate additional factors that lead to higher levels of binge drinking among college students. Because of the strong relation found in the present study between binge-drinking frequency and drinking-related social and academic problems, an increased understanding of these factors is important, not only to researchers but to student affairs administrators and counselors. This strong relation also suggests that college officials are wise to continue and increase their efforts to reduce the levels of drinking among students. Such efforts may include the careful training of residence life staff in the prevention of abusive drinking and the early identification of students who abuse alcohol.

These results have important implications for the work of college counselors in counseling centers and alcohol and drug abuse prevention offices as well. First of all, students who are referred for disciplinary or other problems related to the abuse of alcohol should be assessed with respect to their relationships with peers and the levels of daily stress in their lives. In particular, the nature of the support of friends should be explored carefully, given the positive and negative influences that such support can provide. Furthermore, careful assessments of students' self-worth perceptions and levels of depression (and other symptoms of distress) must be made. Interventions must address each of the areas covered in the assessments to the extent that they may be contributing factors to the students' difficulties involving alcohol.

The next step in the research agenda addressing problematic drinking among college students is a deeper examination, through carefully conducted personal interviews, of the emotional lives of the students, especially those whose drinking has led to significant social and academic problems. In addition to these problems causing short-term damage to relationships and the fulfillment of academic goals, long-term developmental difficulties are likely result. Two such areas of developmental delay may be in the resolution of issues of identity development and intimacy (Erikson, 1963).

Although the model tested in the present study was found to provide a good fit with the data, the correlational nature of the study suggests that cause-and-effect conclusions cannot be drawn from the findings and that alternative models should be investigated. It must also be acknowledged that the nature of the sample, with more that twice as many women as men returning surveys, and therefore not representative of the student body at this or other colleges, suggests that the model tested may describe the process by which women students, more than men students, experience drinking-related problems. Future research should also test this and other models separately for female and male students. Caution must be taken, too, not to attempt to generalize results to college and university students at other types of institutions.

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Table 1

First-Order Correlations Involving the Seven Variables Included in the Model of the Process Influencing Problems Related to Drinking among College Students.

	Faith	Peer Support	Parent Relation Quality	Self-Worth	Binge Freq.	Psychol. Depress.	No. of Problems
Hassles	.01	-.19***	-.26***	-.33***	-.03	.50***	.12***
Faith in God		.12**	-.04	.15***	-.19***	-.07	-.14***
Peer Support			.34***	.46***	.10*	-.37***	.06
Parent Relation				.36***	-.04	-.28***	-.12**
Self-Worth					-.03	-.63***	-.10**
Binge Frequency						<.01	.65***
Depression							.14***

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

Table 2

Standardized Direct, Indirect, and Total Effects of Predictors and Mediators on Problems Related to Drinking

Variable	Direct Effect	Indirect Effect	Total Effect
Hassles	.094	.024	.118
Faith in God	-.039	-.135	-.135
Social Support	---	.066	.066
Parent Relationship	---	-.004	-.004
Self-Worth	---	-.029	-.029
Binge Frequency	.677	---	.677
Depression	.060	---	.060

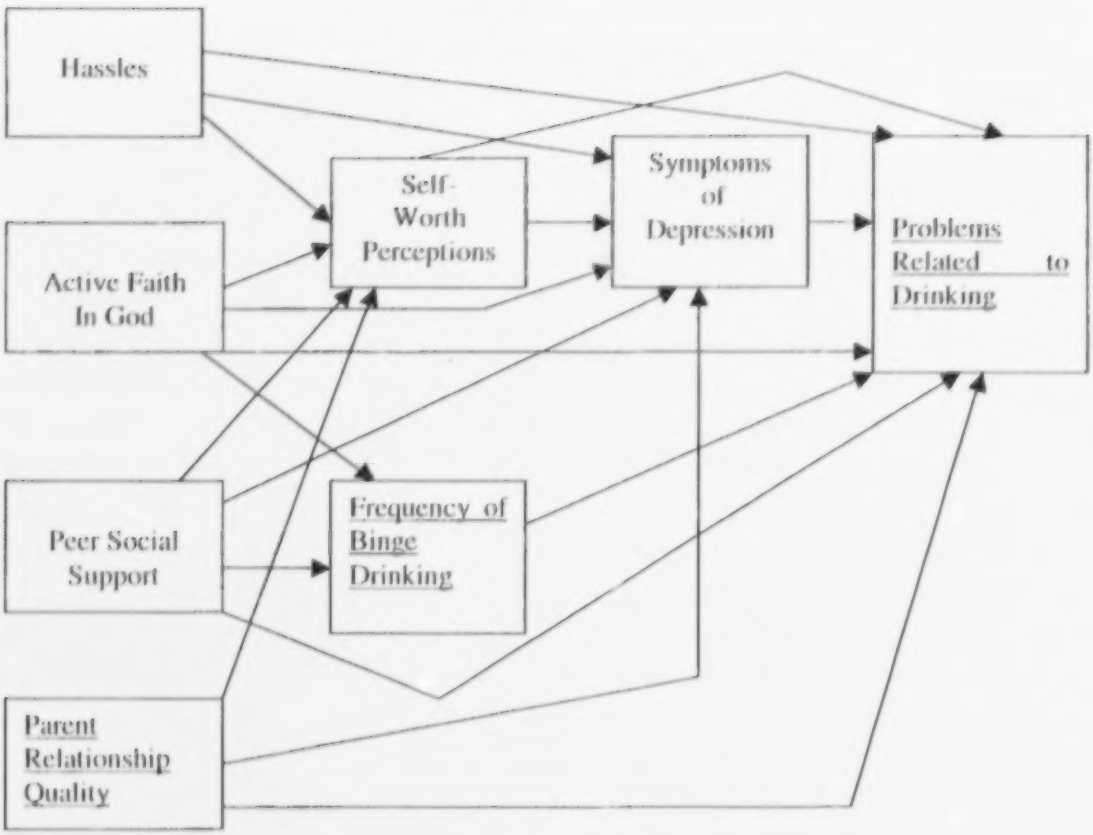

Figure 1. Model of the hypothesized process that predicts the experience of social and academic problems related to college students' alcohol consumption.

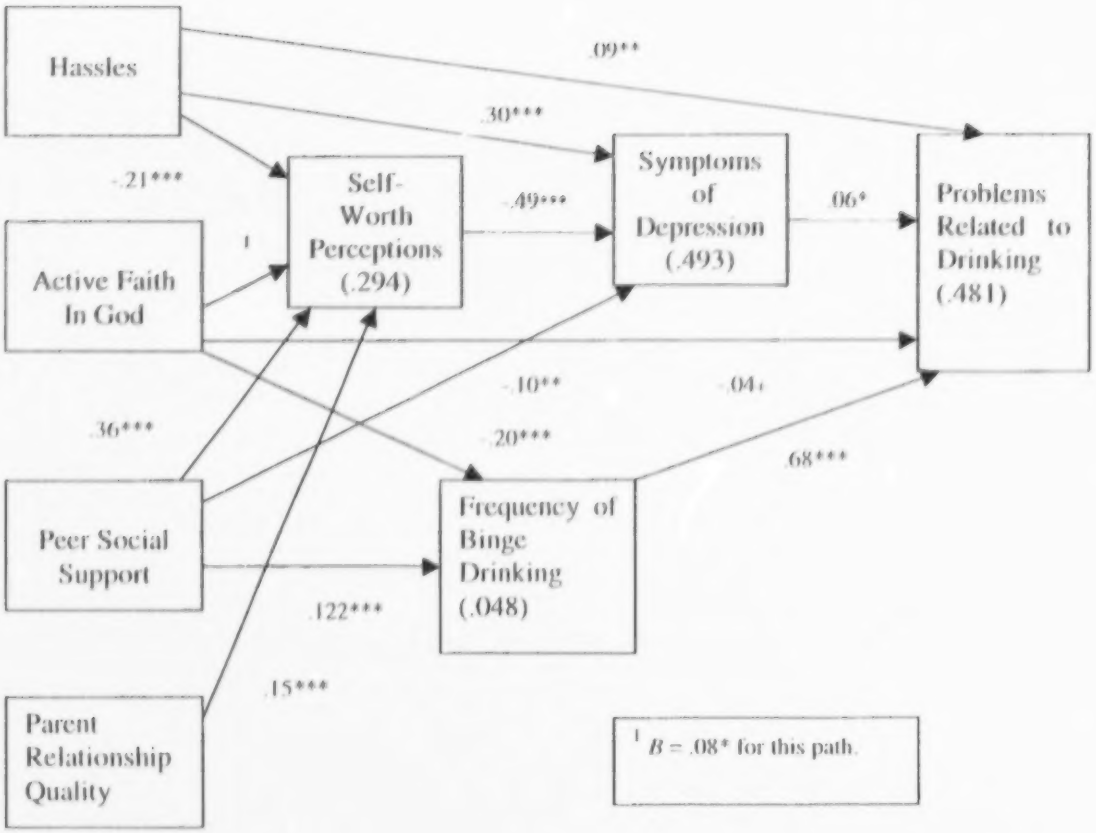

Figure 2. Significant paths and standardized path coefficients for the tested model. Numbers in parentheses represent the amount of variance explained by the variables whose paths feed into the target variable.

$+ p < .10$ $* p < .05$ $** p < .01$ $*** p < .001$

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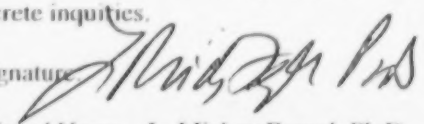
Signature: 

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